

EXHIBIT 12

Expert system

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An **expert system** is software that attempts to reproduce the performance of one or more human experts, most commonly in a specific problem domain, and is a traditional application and/or subfield of artificial intelligence. A wide variety of methods can be used to simulate the performance of the expert however common to most or all are 1) the creation of a so-called "knowledgebase" which uses some knowledge representation formalism to capture the subject matter experts (SME) knowledge and 2) a process of gathering that knowledge from the SME and codifying it according to the formalism, which is called knowledge engineering. Expert systems may or may not have learning components but a third common element is that once the system is developed it is proven by being placed in the same real world problem solving situation as the human SME, typically as an aid to human workers or a supplement to some information system.

As a premiere application of computing and artificial intelligence, the topic of expert systems has many points of contact with general systems theory, operations research, business process reengineering and various topics in applied mathematics and management science

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Expert systems topics

Chaining

There are two main methods of reasoning when using inference rules: backward chaining and forward chaining.

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DEFINITION - An expert system is a computer program that simulates the judgement and behavior of a human or an organization that has expert knowledge and experience in a particular field. Typically, such a system contains a knowledge base containing accumulated experience and a set of rules for applying the knowledge base to each particular situation that is described to the program. Sophisticated expert systems can be enhanced with additions to the knowledge base or to the set of rules.

Among the best-known expert systems have been those that play chess and that assist in medical diagnosis.

Also see [AI](#).

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expert system

NOUN: *Computer Science* A program that uses available information, heuristics, and inference to suggest solutions to problems in a particular discipline.

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